

1/37

1 2 3 4 5 6 7 8 9 10 11 12 13

FIG. 1A

Antenna /
Maxillary Palp-3.0
-1.0
-0.5

FIG. 1B

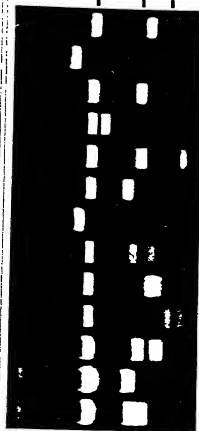
Head Minus
Antenna /
Maxillary Palp-3.0
-1.0
-0.5

2/37

FIG. 1C

Virgin
Female Body- 3.0
- 1.0
- 0.5

FIG. 1D



3/37

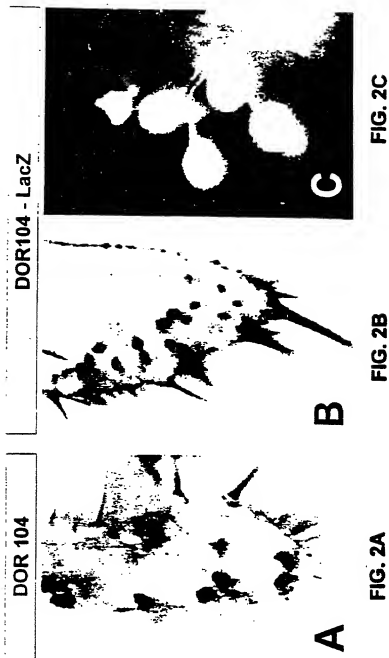
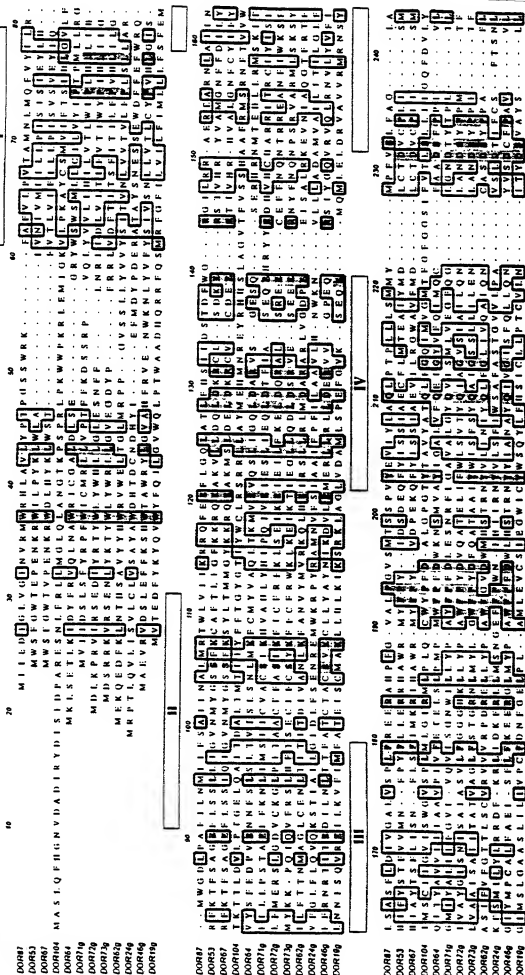


FIG. 3A



[illegible]

D0087	NAVY	418	420	422	424	426	428	430	432	434	436	438	440	442	444	446	448	450	452	454	456	458	460	462	464	466	468	470	472	474	476	478	480	482	484	486	488	490	492	494	496	498	500	502	504	506	508	510	512	514	516	518	520	522	524	526	528	530	532	534	536	538	540	542	544	546	548	550	552	554	556	558	560	562	564	566	568	570	572	574	576	578	580	582	584	586	588	590	592	594	596	598	600	602	604	606	608	610	612	614	616	618	620	622	624	626	628	630	632	634	636	638	640	642	644	646	648	650	652	654	656	658	660	662	664	666	668	670	672	674	676	678	680	682	684	686	688	690	692	694	696	698	700	702	704	706	708	710	712	714	716	718	720	722	724	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	788	790	792	794	796	798	800	802	804	806	808	810	812	814	816	818	820	822	824	826	828	830	832	834	836	838	840	842	844	846	848	850	852	854	856	858	860	862	864	866	868	870	872	874	876	878	880	882	884	886	888	890	892	894	896	898	900	902	904	906	908	910	912	914	916	918	920	922	924	926	928	930	932	934	936	938	940	942	944	946	948	950	952	954	956	958	960	962	964	966	968	970	972	974	976	978	980	982	984	986	988	990	992	994	996	998	1000
D0087	NAVY	418	420	422	424	426	428	430	432	434	436	438	440	442	444	446	448	450	452	454	456	458	460	462	464	466	468	470	472	474	476	478	480	482	484	486	488	490	492	494	496	498	500	502	504	506	508	510	512	514	516	518	520	522	524	526	528	530	532	534	536	538	540	542	544	546	548	550	552	554	556	558	560	562	564	566	568	570	572	574	576	578	580	582	584	586	588	590	592	594	596	598	600	602	604	606	608	610	612	614	616	618	620	622	624	626	628	630	632	634	636	638	640	642	644	646	648	650	652	654	656	658	660	662	664	666	668	670	672	674	676	678	680	682	684	686	688	690	692	694	696	698	700	702	704	706	708	710	712	714	716	718	720	722	724	726	728	730	732	734	736	738	740	742	744	746	748	750	752	754	756	758	760	762	764	766	768	770	772	774	776	778	780	782	784	786	788	790	792	794	796	798	800	802	804	806	808	810	812	814	816	818	820	822	824	826	828	830	832	834	836	838	840	842	844																																																																														

6/37

FIG. 4A

DOR 67



FIG. 4B

DOR 53



FIG. 4C

DOR 62



DOR 87



DOR 64



67+53+62+87+64

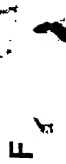


FIG. 4D

FIG. 4E

FIG. 4F

7/37

DOR 71 DOR 72 DOR 73

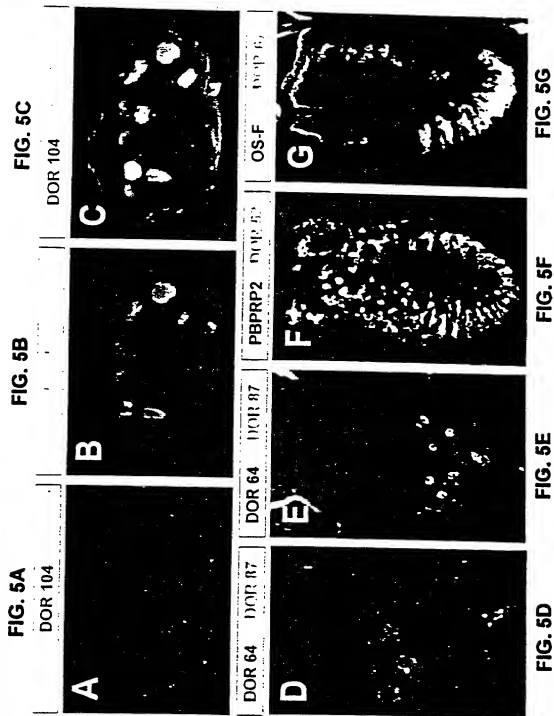


FIG. 4I

FIG. 4H

FIG. 4G

8/37



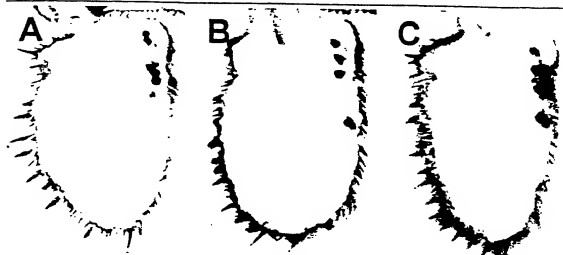
9/37

FIG. 6A

FIG. 6B

FIG. 6C

DOR 53



DOR 87

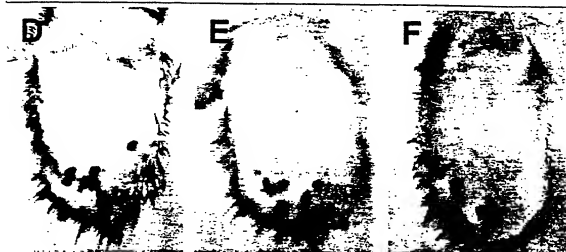


FIG. 6D

FIG. 6E

FIG. 6F

00000000.001701

10/37

FIG. 7A

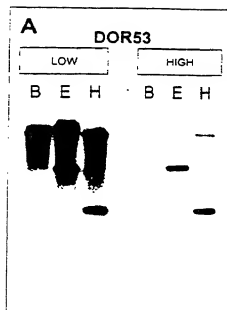


FIG. 7B

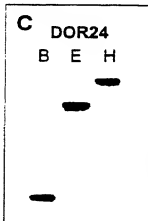
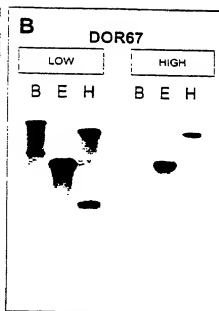


FIG. 7C

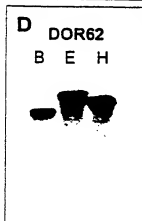


FIG. 7D

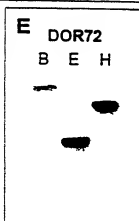


FIG. 7E

11/37

FIG. 8A

DOR62 'AF127921'

LOCUS XXXXX 553 bp mRNA INV 02-FEB-1999
 DEFINITION Drosophila melanogaster putative odorant receptor DOR62 mRNA, partial cds.
 ACCESSION AF127921
 KEYWORDS
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
 Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 553)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey Rzhetsky, and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 553)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, Richard.
 TITLE Direct Submission
 JOURNAL Submitted (02-FEB-1999) Department of Biochemistry and Molecular Biophysics, HHMI-Columbia University, 701 West 168th Street, New York, NY 10032, USA

FEATURES Location/Qualifiers
 Comment: /product='odorant receptor DOR62'
 /tissue_type='adult antenna'
 /note='putative seven transmembrane G protein coupled receptor; genomic DNA sequenced by the European Drosophila Genome Project and given accession number 62D9.q'
 source 1..553
 /organism='Drosophila melanogaster'
 /strain='Oregon R'
 /db_xref='taxon:7227'
 /chromosome='X'
 /map='2F'
 gene <1..553
 /note='Drosophila melanogaster odorant receptor DOR62'
 /gene='DOR62'
 CDS <1..459
 /gene='DOR62'
 /note='odorant receptor'
 /codon_start=1
 /product='DOR62'

/translation="QELIECIRDLARVHRLREIIQRVLSVPCMAQFVCSAAVQCTVAM
 HFLYVADHDHDTAMIISIVFSAVTEVFVICYFGDRMRTQSEALCDAFYDCNWNIEQL
 PKFKRELLFTLARTORPSLIYAGNYIALSLETFEQVMRFTYSVFTLLLRAK"

BASE COUNT 141 a 145 c 132 g 135 t
 ORIGIN
 1 caggaaactca tcgagtgcat ccgcgatctg gcgcgggtcc atcggctgag ggagatcatt
 61 cagcgggtccc ttccagtgccc ctgcgatggcc cagttcgctct gctccgcccgc cgtccagatgt
 121 accgtgcgcca tgcacttcct gtacgtagcg gatgaccacg accacacgcg catgatcatc
 181 tcgattgtat tttcttcggc cgtcaccttg gaggtgtttg taatctgcta ttttggggac
 241 aggatgcgga cacagagcga ggcgctgtgc gatgccttct acgattgcaa cgtgatagaa
 301 cagctgcgcca agttcaagcg cgaactgctc ttacacctgg ccaggacgca cgggccttct
 361 cttatttcag caggcaacta catcgcactc tcgctggaga ccttcgagca ggtcatgagg
 421 ttcacatact ctgttttcac actcttgctg agggcccaagt aagaacttta caatctcttt
 481 ttggggagaa aaatttttaa gcacaatagc agaaaaatat atcagataat ataacaaaaa
 541 aaaaaaaaaa aaa

12/37

FIG. 8B-1

DOR104[AF127922]

LOCUS XXXXX 1493 bp mRNA INV 02-FEB-1999
 DEFINITION Drosophila melanogaster odorant receptor DOR104 mRNA, complete cds.
 ACCESSION AF127922
 KEYWORDS .
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1493)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1493)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (02-FEB-1999) Department of Biochemistry and Molecular Biophysics, HHMI-Columbia University, 701 W. 168th Street, New York, NY 10025, USA
 FEATURES Location/Qualifiers
 Comment: /tissue_type='adult maxillary palp'
 /note='putative seven transmembrane G protein coupled receptor'
 source 1..1493
 /organism="Drosophila melanogaster"
 /strain="Oregon R"
 /db_xref="taxon:7227"
 /chromosome="III"
 /map="85B"
 gene 1..1493
 /note="odorant receptor"
 /gene="DOR104"
 CDS 21..1421
 /gene="DOR104"
 /note="odorant receptor"
 /codon_start=1
 /product="DOR104"
 /translation="MASLQFHGNVDIRYDISLDPARESNIPLRLMGLQLANGTKPS
 PRLPKWPKRLEMIGKVLPAKAYCSMVIPTSLHLGVLFTKTTLDVLPGLQAITDALT
 MTIIYFFTYGYGTIYWCLRSRRLAYMEHMMREYRHSLAGVTFVSSHAAFRMSRNFV
 VWIMSCLLGVISWGVSPMLGIRMLPLQCYWYPPFDALGPGTYTAVYATQLFGQIMVGMT
 FGFGLSLFVTLSSLLLGQFDVLVYSLKNLDAHTKLLGGESVNGLSLQEEILLGDSKR
 ELNQYVLLQEHPTDLLRLSAGRKCPDQGNAFHNALVEICIRLHRFILHCSQELLENLFSP
 YCLVKSQITFQLCLLVFVGVSGTREVLRVNVNLQYLGLTIIFELLMFTYCGELLSRHS
 IIRSGDAFWRGAWMKHAHFIQDILIFLVNSRRVHVHTAGKFFVMDVNLRSVITQAFS
 FLTLQKLAARKTSESL"
 BASE COUNT 332 a 373 c 407 g 381 t

13/37

FIG. 8B-2

ORIGIN

```

1  ggccagagca gtcgatggcc agtcttcagt tccacggcaa cgtcgatgcy gacatcaggt
61  atgatattag cctggatccc gctagggaat cgaatctctt ccgtctgcta atgggactcc
121 agttggcgaa tgggacgaag ccatcgccgc ggttacccaa atggtggcca aagcggctgg
181 aaatgattgg taaagtcgtg cccaaagcct attgttccat ggtgattttc acctccctgc
241 atttgggtgt cctgttcacg aaaaccacac tggatgtcct gccgacgggg gagctgcagg
301 ccataacgga tgccttcacc atgaccataa tatacttttt cacgggctac ggcaccatct
361 actgggtgct ggcgtcccg ggcctcttgg cctacatgga gcacatgaac cgggagtatc
421 gccatcatcc gctggccggg gtgacctttg tgagttagcca tgcgggcttt aggatgtcca
481 gaaacttcac ggtgggtgtg ataatgtcct gcctgctggg cgtgatttcc tggggcgttt
541 cgccactgat gctgggcctc cggatgtctg cgtcccaatg ttggtatccc ttcgacgccc
601 tgggtcccgg cacatatacg gcggtctatg ctacacaact tttcggtcag atcatggtgg
661 gcatgacctt tggattcggg ggatcactgt ttgtccacct gagcctgcta ctctggggac
721 aattcgatgt gcttactg cgcctgaaga acctggatgc ccataccaag ttgctgggcy
781 gggagtctgt aaatggcctg agttcgctgc aagaggattt gctgctgggg gactcgaaga
841 ggggaattaaa tcagtagctt ttgtccagg agcatccgac ggatctgctg agattctcgg
901 caggacgaaa atgcctgac caaggaatat cgtttcacaa cgccctgggt gaatgcattc
961 gcttgcacgt cttcattctg cactgctcac agggagtggg gaattccatt agtccatatt
1021 gtctgggtcaa gtcactgcag atcacctttt agctttgctt gctgggtctt gtgggcgttt
1081 cgggtactcg agaggtcctg cggattgtca accagctaca gtacttggga ctgaccattc
1141 tcgagctccc aatgttcacc tatgtggcgg aactcctcag tcggcatagt attcgatctg
1201 gcgacgcctt tggaggggtt gctgtgtgga agcacgcccc ttctatccgc caggacatcc
1261 tcattctttt ggtcaatagt agacgtgcag ttacgtgac tgcgggcaag ttttatgtga
1321 tggatgtgaa tcgtctaaga tcggttataa cgcaggcgtt cagcttcttg accttgcctg
1381 aaaagtgtgc tgcgaagaag acggaatcgg agctctaaac tggtaaccac cctcgatatt
1441 tatttagcgc attaaaaaaa agtcgagtaa aagcaaaaaa aaaaaaaaaa aaa

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14/37

FIG. 8C-1

DOR87 [AF127926]

LOCUS XXXXX 1556 bp mRNA INV 02-FEB-1999
 DEFINITION Drosophila melanogaster odorant receptor DOR87 mRNA, complete cds.
 ACCESSION AF127926
 KEYWORDS
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1556)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1556)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (02-FEB-1999) Department of Biochemistry and Molecular Biophysics, HHMI-Columbia University, 701 West 168th Street, New York, NY 10032, USA
 FEATURES Location/Qualifiers
 Comment: /tissue='adult antenna'
 /note='putative seven transmembrane G protein coupled receptor'
 source 1..1556
 /organism="Drosophila melanogaster"
 /strain="Oregon R"
 /db_xref="taxon:7227"
 /chromosome="II"
 /map="43B1-2"
 gene 1..1556
 /note="odorant receptor"
 /gene="DOR87"
 CDS 30..1157
 /gene="DOR87"
 /note="odorant receptor"
 /codon_start=1
 /product="DOR87"
 /translation="MTIEDIGLVGINVRMWRHLAVLYPTPGSSWRKFAFVLPVTAMNL
 MQFVYLLRMWGDLPFILNMFFFS AIFNALMRTWLVIKRRQFEFLGQLATLPHSIL
 DSTDEWGRGILRRAEREARNLAILNLSASFLDIVGALVSPLFREERAHPFGVALPGVS
 MTSSPVVEVIYLAQLPTPLLLSMYMPFVSLFAGLAIFGKAMLQILVHRLGQIGGEEQ
 SEERFORLASCIAHYTQVMRYVWQNLKLVANIVAVEAIIFGSIICSLFLCLNIITSP
 TQVISIVMYILTMLVLFITYNRANEICLENRRVAEAVYNVPWYEAGTRFRKTKLLIFL
 MQTQHPMEIRVGNVPMTLAMFQSLNASYSYFTMLRGVGTGK"
 BASE COUNT 329 a 413 c 408 g 406 t

15/37

FIG. 8C-2

ORIGIN

```

1   ggcacgaggc ttatagaaag tgcgagcaa tgacaatcga ggatatcggc cggctgggca
61  tcaacgtgcg gatgtggcga cacttggccg tgctgtaccc cactccgggc tccagctggc
121 gcaagttcgc cttcgtgctg ccggtgactg cgatgaatct gatgcagttc gtctacctgc
181 tgcggtatgt ggcgcacctg ccgccttcca ttctgaacct gtctctcttc tcggccattt
241 tcaacgcccc gatgcgacg tggctggtca taatcaagcg gcgcagttc gaggagttc
301 tcggccaact ggcacctctg ttcctatcga ttctcgactc caccgacgag tggggcgctg
361 gcatcctgcg gagggcggaa cgggaggctc ggaacctggc catccttaat ttgagtgcct
421 ccttccctga cattgtcggg gctcgtgtat cgcgcgtttt caggaggagg agagcttacc
481 ccttccgctg agctctacca ggagtgcga tgaccagttc acccgtctac gaggttatct
541 acttggccca actgctctacg cccctgctgc tgtccatgat gtacatgccc ttcgtcagcc
601 tttttgccgg ccttgccatc tttgggaagg ccatgtctga gatcctggta cacaggctgg
661 gccagattgg cggagaagag cagtccgagg aggagcgctt ccaaaggctg gcctcctgca
721 ttgcgtacca cagcgaggtg atgcgctatg tgtggcagct caacaaactg gtggccaaca
781 ttgtggcggt ggaagcaatt atttttggct cgataactcg ctcaactgct tctgtctga
841 atattataac ctcaccacc caggtgatct cgatagtgat gtacattctg accatgctgt
901 acgttctctt cactactac aatcgggcca atgaatatg cctcagaaac aaccgggtgg
961 cggaggctgt ttacaatgtg ccttggtagc aggcaggaac tcggtttcgc aaaacccctc
1021 tgatcttctt gatgcaaaaca caacaccgga tggagataag agtcgggaac gtttacccca
1081 tgacattggc catgttccag agtctcttga atgcgtccca ctccactctt accacgtctc
1141 gtggcgctca cggcaaatga gctgaaagac cgaaaaaacc ggagtatccc cttccatatt
1201 cccctgctc ctttattttt ctttcccttt ccttctccgt ttcccatctc gcttttccag
1261 caatccgggt aatgcaaaaa gttgttctgt gctgtgtgtc tggctgctg tttggcattt
1321 gcatatgctt gtcgtttgaa aggattttaa cggactgctg gcacggagtc ggcactctgg
1381 ctccctggatc ctggcatgca aatagttggc ttcttagatt gttacacaaa atagattgta
1441 gattgcagct gaatgttctg cttgggaataa agtcaaaagg atgtggagtc ggcaccaaggc
1501 tctgccattt ctgttcttc gggatgcccg aaagtatgaa aaaaaaaaaa aaaaaa

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16/37

FIG. 8D-1

DOR53 [AF127923]

LOCUS XXXXX 1305 bp mRNA INV 06-FEB-1999
 DEFINITION Drosophila melanogaster putative odorant receptor DOR53 mRNA,
 complete cds.
 ACCESSION AF127923
 KEYWORDS
 SOURCE fruit fly.

ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
 Drosophilidae; Drosophila.

REFERENCE 1 (bases 1 to 1305)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey
 Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila
 Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1305)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (06-FEB-1999) Department of Biochemistry and Molecular
 Biophysics, HHMI-Columbia University, 701 West 168th Street, New
 York, NY 10032, USA

FEATURES
 source Location/Qualifiers
 1..1305
 /organism="Drosophila melanogaster"
 /strain="Oregon R"
 /db_xref="taxon:7227"
 /note="...tissue_type='adult antenna' _note='putative seven
 transmembrane G protein coupled receptor';"
 /chromosome="II"
 /map="22A2-3"
 gene 1..1305
 /note="odorant receptor"
 /gene="DOR53"
 CDS 79..1179
 /gene="DOR53"
 /note="odorant receptor"
 /codon_start=1
 /product="DOR53"

/translation="MWSFGWTEPENKRWILPYKLWLAFVNIWMLILLPISISIEYLHR
 FKTFSSAGEFLSSLEIGVNMYGSSFFKCAFTLIGFKRQEAQVLLDQDKRCLSDKERST
 VHRVYVAMGNFFDILYHIFYSTFVVMNFFYFLLERRHAWRMYPYIDSDEQFYISSIAE
 CFLMTEAIYMDLCTDVCPLISMLMARCHISLLKQRLRNLRKSPGRTEDEVLEELTECI
 RDHRLLLDYVDALRPVFSGTIFVQFLLLIGTVLGLSMINLMFFSTFWTG VATCLFMFDV
 SMETFFFCYLCNMIIDDCQEMSNCFLQSDWTSADRRYKSTLVYFLHNLQQPITLTAGG
 VFPISMQTNLAMVKLAFSVVTVIKQFNLAERFQ"
 BASE COUNT 331 a 286 c 279 g 409 t

17/37

FIG. 8D-2

ORIGIN

```

1  ttttttcccc acataaaaga aaagccattg agcgagcggg ttaagtcctg agatgccttc
61 atttactctg atcgggtgat gtgggtccct ggctggacag agcctgaaaa caaaaggctg
121 atctctctct ataacctgtg gttagcgttc gtgaacatag taatgctcat cctctctccg
181 atctcgataa gcatcgagta cctccaccga tttaaaacct tctcgcgggg ggagttctct
241 agttccctcg agattggagt caacatgtac ggaagctctt ttaagtcgcg cttcaccttg
301 attggattca agaaaagaca ggaagctaaq gttttactgg atcagctgga caagagatgc
361 cttagcgata aggagaggtc cactgttcat cgctatgctg ccattgggaaa cttctctgat
421 attctgtatc acatttttta cttccacctc gtggtaatga acttcccgta tttctctgct
481 gagagacgac atgcttggcg catgtacttt ccataatctg attccgacga acagtcttac
541 atctccagca tcgccgagtg tttctctgat acggaggcca tctacatgga tctctgtacg
601 gacgtgtgtc ccttgatctc catgcttatg gctcgatgcc acatcagcct cctgaacacg
661 cgactgagaa atctccgatc gaagccagga aggaccgaag atgagtactt ggaggagctc
721 accgagtcca ttcgggatca tcgattgtca ttggactatg ttgacgattt gcgacccgtc
781 ttttcgggaa ccatttttgt gcagttcctc ctgatcggtg ctgtactggg tctctcaatg
841 ataaatctaa tgtctctctc gacattcttg actggtgtcg ccacttgctt ttttatgttc
901 gacgtgtcca tggagacgtt ccccttttgc tatttgtgca acatgattat cgatgactgc
961 caggaaaatgt ccaattgcct ctttcaatcg gactggacct ctgccgatcg tcgctacaaa
1021 tccactcttg tatactttct tcaacaattt cagcaaccca tctactctac ggctggtgga
1081 gtgtttctcta tttccatgca aacaaatttg gctatggtga agctggcatt tctgtggtt
1141 acggtaacta agcaacttaa cttggccgaa aggtttcaat aagttgagag gacgagcttc
1201 tcttactatt atattatata ttatattata ttatttttat attatattat
1261 gctgtacctt aataaatatt tagtaataaa aaaaaaaaaa aaaaa

```

18/37

FIG. 8E-1

DOR67 [AF127924]

LOCUS XXXXX 1321 bp mRNA INV 06-FEB-1999
 DEFINITION Drosophila melanogaster putative odorant receptor DOR67 mRNA, complete cds.
 ACCESSION AF127924
 KEYWORDS
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1321)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1321)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (06-FEB-1999) Department of Biochemistry and Molecular Biophysics, HHMI-Columbia University, 701 West 168th Street, New York, NY 10032, USA
 FEATURES Location/Qualifiers
 Comment: /tissue_type='adult antenna'
 /note='putative seven transmembrane G protein coupled receptor'
 source 1..1321
 /organism="Drosophila melanogaster"
 /strain="Oregon R"
 /db_xref="taxon:7227"
 /chromosome="II"
 /map="22A3"
 gene 1..1321
 /note="odorant receptor"
 /gene="DOR67"
 CDS 102..1202
 /gene="DOR67"
 /note="odorant receptor"
 /codon_start=1
 /product="DOR67"
 /translation="MWSFGWTVPENKRWDLHYKLWSTFVTLVIFILLPISVSVEYIQRFKFTSAGEFLSSIQIGVNMVGGSSFKSYLTMMGYKKRQEAKMSLDELDRKRCVDEERTI VHRHVALGNFCYIFYHIAYSFLISNLSFIMKRIHANRMYPYVDPEKQFYISSIAE VILRGWAVFMDLCTDVCPISMVIARCHITLLKQRLNLRSEPGRTEDEYLKELADCV RDHRLILDYVDALRSVFSGTIFVQFLLLIGIVLGLSMINIMFFSTLSTGVAVVLFMSCV SMQTFFFCYLCNMIMDDCQEMADSLFQSDWTSADRRYKSTLVYFLHNLQQPIILTGG VFFISMQTNLMVKLAFTVTVTIIVKQFNLAEFQ"
 BASE COUNT 348 a 281 c 294 g 398 t

19/37

FIG. 8E-2

ORIGIN

```

1  ggcacgagga aatgttaagc cagttctttc cccacattaa agaaaaacca ttgagcagac
61  gggttaagtc ccgagatgcc ttccgtttact tagatcgggt gatctgggtcc ttggcggga
121 cagtgcctga aaacaaaagg tgggatctac attacaaact ggggtcaact ttctgacat
181 tgggtgatatt tatcctctctg ccgatatcgg taagcgttga gtatattcag cggttcaaga
241 ccttctcggc ggggtgagttt cttagctcaa tccagattgg cgttaacatg tacggaagca
301 gctttaaaag ttatttgacc atgatgggat ataagaagag acaggagggt aagatgtcac
361 tggatcgagct ggacaagaga tgcgtttgtg atgaggagag gaccattgta catcgacatg
421 tcgcccctggg aaacttttgc tatattttct atcacattgc gtacacttagc tttttgattt
481 caaacttttt gtcattttata atgaagagaa tccatgcctg gcgcattgac ttccctacg
541 tcgacccccg aaagcaattt tacatctctt gcactgcgga agtcaattct agggggtggg
601 ccgtcttcat ggcattctgc accgatgtgt gtcccttgat ctccatggta atagcacgat
661 gccacatcac ccttctgaaa cagcgcctgc gaaattctac atcggaacca ggaaggacgg
721 aagatcgagta cttgaaggag ctccgcgact gcgttcgaga tcaccgcttg atattggact
781 atgtcgacgc attcgcatcc gtctttctcg ggacaatttt tctgcagttc ctcttgatcg
841 gtattgttact gggctctgtca atgataaata taatgttttt ctcaacactt tcgactgggtg
901 tcgcggttgt cctttttatg tcttgcgtag ctatgcagac gttccccctt tgctatttgt
961 gtaacatgat tatggatgac tgccaagaga tggcgcgactc cctttttcaa tcggactgga
1021 catctgcgga tcgtcgctac aaatccactt tgggtatactt tcttcaaat ctccagcagc
1081 ccattatttc tacggctggg gtagtctctt ctatttccat gcaacaacaa ttaaatatgtc
1141 tgaagctggc ctttactgtg gtacaaatag tgaacaatt taacttggca gaaaagtctc
1201 aataagttaa gatttgcaag ctctgctatt ataaacctac actcgagaaa atattcttc
1261 acattataaa accttcagta cttactgctt gtggcgcccc cggaaaaaaa aaaaaaaaaa
1321 a

```

20/37

FIG. 8F-1

DOR64 [AF127925]

LOCUS XXXXX 1308 bp mRNA INV 06-FEB-1999
 DEFINITION Drosophila melanogaster putative odorant receptor DOR64 mRNA, complete cds.
 ACCESSION AF127925
 KEYWORDS .
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1308)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1308)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (06-FEB-1999) Department of Biochemistry and Molecular Biophysics, HHMI-Columbia University, 701 West 168th Street, New York, NY 10032, USA
 FEATURES Location/Qualifiers
 Comment: /tissue_type='adult antenna'
 /note='putative seven transmembrane G protein coupled receptor'
 source 1..1308
 /organism='Drosophila melanogaster'
 /strain='Oregon R'
 /db_xref='taxon:7227'
 /chromosome='II'
 /map='23A1-2'
 gene 1..1308
 /note='odorant receptor'
 /gene='DOR64'
 CDS 22..1158
 /gene='DOR64'
 /note='odorant receptor'
 /codon_start=1
 /product='DOR64'
 /translation='MKLSETLKIDYFRVQLNAWRICGALDLSSEGRVNSWSMLLCILVY
 LPTPMLLRGVYSFEDFPVENNFSLSLTIVTSLSLNLMKFCMYVAQLTKMVEVQSLIGQLDA
 RVSGESQSERHRNMTHELLRMSKLFQITAYVVFIIAAVPFVFETELSLPMPMWFPPDW
 KNSMVAYIGALVFQEIGYVFQIMQCFAADSFPPVLVYLISEQCQLLILRISEIGYGYK
 TLENEQDLVNCIRDQNALYRLLDVTKSLVSYPMMVQFMVIGINIAITLFLVLIFYVET
 LYDRIYYLCFLLGITVQTYPLCYGTMTVQESFAELHYAVFCSNMWVQDSASYRGHMLIL
 AERTKRMQLLAGNLVPIHLSTYVACWKGAYSFFFTLMADRDLGLGS'
 BASE COUNT 331 a 314 c 305 g 358 t

21/37

FIG. 8F-2

ORIGIN

```

1  ggcacgagcc aagaattcaa aatgaaactc agcgaiaacc taaaaatcga ctattttcga
61  gtcccagttga atgcttgccg aatttttggt gccttgatc tcagcgaggg taggtactgg
121 agttggttcga tgcatttgct catcttggtg tacctgccga caccatgct acctgagagga
181 gtatacagtt tcgaggaacc ggtggaaaaa aatttcagct tgagcctgac ggtcacatcg
241 ctgtccaatc tcatagaatt ctgcatgtac gtggcccaac taacaaagat ggtcagaggtc
301 cagagtcctta ttggtcagct ggaatgcccg gttctctggc agagccagtc tgagcgtcat
361 agaaaatatga ccgagcacct gctaaggatg tccaagctgt tccagatcac ctacgctgta
421 gtcttcacata ttgctgcagt tcccttcggt ttgcgaactg agctaaagctt acccatgccc
481 atgtgtgtttc ccttcgactg gaagaactcg atggtggcct acatcggagc tctgtgtttc
541 caggagattg gctatgtctt tcaaatatg caattgcttg cagctgactc gtttcccccg
601 ctctgtactgt acctgatctc cgagcaatgt caattgctga tccctgagaat ctctgaaatc
661 ggatatgtgtt acaagactct ggaggagaac gaacaggatc tgggtcaactg catcagggatg
721 caaaaacgcgc tgtatagatt actcgtatgt accaagagtc tctgttcgta tccccatgatg
781 gtgcagttta ttgttatttg catcaacatc gccatcaacc tatttgtctt gatattttac
841 gtggagacct tgtacgatcg catctattat ctctgtcttc tcttgggcat caccgtcgag
901 acatatccat tgtgctacta tggaaaccatg gtgcaggaga gttttgctga gcttcactat
961 gcggtattct gcagcaactg ggtggatcaa agtgccagct atcgtgggca catgctcatc
1021 ctggcggagc gcactaagcg gatgcagctt ctctcgcgcg gcaacctggt ggcattccac
1081 ctgagccacct acgtggcctg ttggaaggga gcctactcct tcttcacctt gatggccgat
1141 cgagatggcc tgggttctta gtagccagct catctcactc acatttctca tcaagtagta
1201 ctaccactga acacgaacac gaattatttc aaagtaaaaca cataatttc acaatagctt
1261 atcactttta taaaattttt ggttaccatg aaaaaaaaa aaaaaaaa

```

22/37

FIG. 8G-1

DOR71g

LOCUS XXXXX 1252 bp DNA INV 07-FEB-1999
 DEFINITION *Drosophila melanogaster* odorant receptor DOR71g, GENSCAN
 predicted complete cds.
 ACCESSION :
 KEYWORDS :
 SOURCE fruit fly.
 ORGANISM *Drosophila melanogaster*
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 Pterygota; Diptera; Brachycera; Muscomorpha; Sphydroidea;
 Drosophilidae; *Drosophila*.

REFERENCE 1 (bases 1 to 1252)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey
 Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the *Drosophila*
 Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1252)
 AUTHORS Ceiniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
 Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
 Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,
 Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,
 Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P.,
 Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,
 Pfeiffer, B., Poon, L., Punch, E., Sequeira, A., Sethi, H., Snir, E.,
 Svirskas, R.R., Twomey, B., Wan, K.H., Weinburg, T., Zhang, R.,
 Zieran, L.L. and Rubin, G.M.
 TITLE Sequencing of *Drosophila melanogaster*
 JOURNAL Unpublished
 REFERENCE 3 (bases 1 to 1252)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (07-FEB-1999) Department of Biochemistry and Molecular
 Biophysics, HHMI-Columbia University, 701 West 168th Street, New
 York, NY 10032, USA

FEATURES Location/Qualifiers
 Comment: /tissue_type="adult maxillary palp"
 /note="putative seven transmembrane G protein coupled
 receptor"
 /note="sequence annotation for BDGP P1 clone DS07071;
 predicted using GENSCAN; join (26150-24899)"

source 1..1252
 /organism="Drosophila melanogaster"
 /db_xref="taxon:7227"
 /chromosome="II"
 /map="33B1-2"

exon 1..731
 /gene="DOR71g"
 /note="exon"

mRNA join(1..731,811..1234)
 /gene="DOR71g"

CDS join(1..731,811..1234)
 /gene="DOR71g"
 /note="odorant receptor"
 /codon_start=1
 /product="DOR71g"

23/37

FIG. 8G-2

```

/translation="MVIIDSLSFYRPFWICMRLLVPTFFKDSSRPVQLVVLHILVT
LWFPLHLLHLLLPSTAEFFKNLTMSLTCVACSLKHVAHLYHLPQIVEIESLIEQLD
TFIASEQEHRYRDRHVHCHARRFRCLYISFGMIYALFLFGVVFQVIGSNWELLYPAY
FPFDLESNRFGLGAVALGYQVFSMLVEGFQGLGNDYTPLTCLLAGHVHLWSIRMQL
GVFDDTIVNHRQLLDYIEQHKLLVRFHNLVSRITISEVQLVQLGGCGATLCTIVSYML
FFVGGDTISLVVYLVFFGVVQQLFPSCYFASEVAEELERLPYAIFSSRWYDQSRDHRF
DLLIFTQLTLGNRGWIIKAGGLIELNLNAFFATLKMAYSLFAVVVRAGKI"

```

```

gene 1..1234
      /note="odorant receptor"
      /gene="DOR71g"
intron 732..810
      /gene="DOR71g"
      /note="intron"
exon 811..1231
      /gene="DOR71g"
      /note="exon"
polyA_signal 1246..1252
      /note="polyA_signal"

```

```

BASE COUNT 269 a 299 c 305 g 379 t
ORIGIN

```

```

1 atggtcatta tcgacagtct tagtttttat cgtccattct ggaatcgcat gcgattgctg
61 gtaccgactt tcctcaagga ttccctaacgt cctgtccacg tgcactgggt gt-gctgcac
121 atccctggta ccttgtggtt tccactgcac ctgctgtctg accttctgct acctccatct
181 accgctgagt tccttaagaa cctgaccatg tctctgacct gtgtggccctg cagcttgaag
241 catgtggtccc acttgatcata cttgcgcgag attgtggaaa tcgaatacact gatcgaagcaa
301 ttagacacat ttattgccag cgaacaggag catcgtttact atcgggatca cgtacattgc
361 catgtcaggc gctttacaag atgtctcttat attagctttg gcactgatcta tgccgttttc
421 ctgttcggcg tcttcgttca ggttattagc ggaaatttgg aaacttctcta tccagcctat
481 tttccattcg acttggagag caatcgcttt ctccgcccag tagccttggg ctatcaggta
541 ttcagcatgt tagttgaagg cttccagggg ctgggcaacg atacctatac cccactgacc
601 ctatgccttc tggccgcgaca tgtccatttg tggccatac gaatgggtca actgggatac
661 ttcgatgacg agacggtggt gaatcatcag cgtttgcctg attacattga gcagcataaa
721 ctcttgggtc ggtaagcttt gattaactaa cttttgacaa gaagtttatt cactttaact
781 ggtttcaaaa acgatgcact caatgtgcag attccacaac ctggtgagcc ggaccatcag
841 cgaagtgcac ctgtgtgcagc tggcgcgatg tggagccact ctgtgcatac ttgtctccta
901 catgctcttc tcttggggcg acacaacttc cctgtgtctac tacttgggtg tctttggagt
961 ggtctgcgtc cagctctttc ccagctgcta ttttgccagc gaagtgcggc aggtgtgga
1021 acggctgcga tctgcgatct tctccagcag atggtagcat caatcgcggg atcaccgatt
1081 cgatttgcct atctttacac aattaacact gggaaaccgg ggtgtgatca tcaagtcagg
1141 aggtcttata cgtcgaatt tgaatgcctt tttcgccacc ctgaagatgg cctattccct
1201 ttttgcagct gtggtgcggg caaagggtat atagagagtc tgtttaatta aa

```

24/37

FIG. 8H-1

DOR72g

LOCUS XXXXX 1321 bp DNA INV 08-FEB-1999
 DEFINITION Drosophila melanogaster odorant receptor DOR72g, GENSCAN
 predicted complete cds.
 ACCESSION :
 KEYWORDS :
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
 Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1321)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey
 Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila
 Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1321)
 AUTHORS Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
 Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
 Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,
 Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,
 Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P.,
 Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,
 Pfeiffer, B., Poon, L., Punch, E., Sequeira, A., Sethi, H., Snir, E.,
 Svirskas, R.R., Twomey, B., Wan, K.H., Weinburg, T., Zhang, R.,
 Zieran, L.L. and Rubin, G.M.
 TITLE Sequencing of Drosophila melanogaster
 JOURNAL Unpublished
 REFERENCE 3 (bases 1 to 1321)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (08-FEB-1999) Department of Biochemistry and Molecular
 Biophysics, HHMI-Columbia University, 701 West 168th Street, New
 York, NY 10032, USA
 FEATURES Location/Qualifiers
 Comment: /tissue_type='adult antenna'
 /note='putative seven transmembrane G protein coupled
 receptor'
 /note='sequence annotation for BDGP P1 clone DS07071:
 predicted using GENSCAN; join (27938-26618)'
 source 1..1321
 /organism='Drosophila melanogaster'
 /db_xref='taxon:7227'
 /chromosome='II'
 /map='33B1-2'
 mRNA join(1..728,910..1321)
 /gene='DOR72g'
 gene 1..1321
 /note='odorant receptor'
 /gene='DOR72g'
 exon 1..728
 /gene='DOR72g'
 /note='exon'
 CDS join(1..728,910..1321)
 /gene='DOR72g'
 /note='odorant receptor'
 /codon_start=1
 /product='DOR72g'

25/37

FIG. 8H-2

```

/translation="MDLKPRVISEDIVRTYWLWHLLGLSENFNRLLDLVITIFV
TIWYPIHLILGLFMERSLGDVCKGLPITAACFFASFKFICFRFKLSEIKETILFKEL
DQRLSREECEFFNONTREANFIWKSFIYAGLSNISAIASVLFGGGHKLLYPWFPP
YDVQATELIFWLSVTYQIAGVSLAILQNLANDSYPPMTFCVAVGHVRLAMRLSRIGQ
GPEETIYLTGKQLIESTEDHRKLMKIVELLRSTMNISQLGQFISSGVNISITLVNILF
PADNNFAITYYGVYFLSMVLELFPCCYXGTLISVENMQLTVAIYSSNWMMSMNRYSRI
LLIFMQTLTAEVQIKAGGMIGIGMNAFFATVRLAYSFFTLAMSRL"

```

```

intron      729..909
             /gene="DOR72g"
             /note="intron"
exon        910..1121
             /gene="DOR72g"
             /note="exon"

```

BASE COUNT	361 a	255 c	283 g	422 t
ORIGIN				
1	atggacttaa	aaccgcgagt	cattcgaagt	gaagatatct
61	tggcatcttt	tgggccttga	aagcaatttc	ttctggaatc
121	acaaattttc	taaccatttg	gtatccaatt	cacctgattc
181	tttttggggg	atgctctgca	gggtctacca	attacggcag
241	aaattctatt	gtttctcgct	caagctatat	gaaattaaag
301	gagcttgagt	agcgagcttt	aagtcgagag	gaatcgagat
361	cgtgagcgga	atttcatttg	gaaaagtttc	atttgggcct
421	gctatttcat	cagttctttt	cggcggttga	cataagctat
481	tacgatgtgc	aggccacgga	actaatattt	tggctaatgt
541	gtaagtgttg	ccatacttca	gaatttggcc	aatgattcct
601	gtggttgccg	gtcatgttaag	acttttggcg	atgcgcttga
661	gaggaaacaa	tatactttaac	cggaaagcaa	ttaatcgaaa
721	ctaagtgaat	aatgtacata	tatagaatgg	tttttagtta
781	tgtaggaaaa	ccattcttgt	tgtcgggtgt	cacggaaatc
841	tgataattaaa	tacttctctg	caaaccaatt	tcataattagt
901	tatttccaga	atgtrgggaat	tactgcgcag	caccattgaat
961	tatttcaagt	ggtgttaata	tttccataac	actagtcaac
1021	taatttcgct	ataacctact	acggagtgta	cttctctatg
1081	gtcgttgcgt	tacggcacc	tgaatctcgt	ggagatgaac
1141	ctcaagtaac	tggatgagta	tgaaatcgga	ctacagccgc
1201	actcaccctg	cgggaagtgc	agatcaaggc	cggctgggatg
1261	ctctcttgc	accgtgcgat	tggcctacc	ctcttctact
1321	a			

26/37

FIG. 8I-1

DOR73g

LOCUS XXXXX 1212 bp DNA INV 08-FEB-1999
 DEFINITION Drosophila melanogaster odorant receptor DOR73g, GENSCAN
 predicted complete cds.
 ACCESSION :
 KEYWORDS :
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
 Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1212)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey
 Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila
 Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1212)
 AUTHORS Celisner, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
 Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
 Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,
 Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,
 Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P.,
 Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,
 Pfeiffer, B., Poon, L., Punch, E., Sequeira, A., Sethi, H., Snir, E.,
 Svirskaas, R.R., Twomey, B., Wan, K.H., Weinburg, T., Zhang, R.,
 Zieran, L.L. and Rubin, G.M.
 TITLE Sequencing of Drosophila melanogaster
 JOURNAL Unpublished
 REFERENCE 3 (bases 1 to 1212)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (08-FEB-1999) Department of Biochemistry and Molecular
 Biophysics, HHMI-Columbia University, 701 West 168th Street, New
 York, NY 10032, USA
 FEATURES Location/Qualifiers
 Comment: /tissue_type="adult antenna"
 /note="putative seven transmembrane G protein coupled
 receptor"
 /note="sequence annotation for BDGP P1 clone DS07071;
 predicted using GENSCAN; join (29614-28403)"
 source 1..1212
 /organism="Drosophila melanogaster"
 /db_xref="taxon:7227"
 /chromosome="II"
 /map="33B1-2"
 mRNA join(1..722,798..1212)
 /gene="DOR73g"
 gene 1..1212
 /note="odorant receptor"
 /gene="DOR73g"
 exon 1..722
 /gene="DOR73g"
 /note="exon"
 CDS join(1..722,798..1212)
 /gene="DOR73g"
 /note="odorant receptor"
 /codon_start=1
 /product="DOR73g"

27/37

FIG. 8I-2

```

translation="MDSRRKVRSENLYKYTWLYWRLLGVEGDYFFRRLVDFTTTSFIT
ILFPVHLILGMYKKPQIQVFRSLHFTSECLFCSYKFFCFRWKLKEIKTIEGLLDQDLS
RVSEEEERNYFNQNP SRVARMLSKSYLVA AISAIITATVAGLFSTGRNLMYLGWFFPD
FQATAAIWISFYQAI GSSLLILENLANDSYPPITFCVVGSHVRLIMRLSRIGHDV
KLSSSENTRKLIIEGIQDHRKLMKIIIRLLRSTLHLSQLGQFLSSGINISITLINILFFA
ENNFMALYYAVFFAAMLIELFPSCYYILMTMEFDKLPYAIFSSNWLKMDKRYNRSLI
ILMQLTLVPVNIKAGGIVGIDMSAFFATVRMAYSFYTLALSFRV"

```

```

intron      723..797
             /gene="DOR73g"
             /note="intron"
exon        798..1212
             /gene="DOR73g"
             /note="exon"

```

```

BASE COUNT      352 a      231 c      242 g      387 t
ORIGIN

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1  atggattcaa gaaggaaagt ccgaagtga aatctttaca aaacctattg gctttactgg
61  cgactcttcg gagtcgaggg cgattatcct ttctcgacggc tagtggaattt cacaatcacg
121 tctttcatta cgattctatt tcccgctgcat cttataactgg gaactgataa aaagctccag
181 attccaagctt ccaggagctct gcattctaca tcggaaatgcc tttctctgag ctataagctt
241 tctctgtttc gttggaaact taaagaaata aagaccatcg aaggattgct ccaggatctc
301 gatagtcgag ttgaaagtga agaagaacgc aactacttta atcaaaatcc aagtcgtgtg
361 gctcgaaatgc ttctgaaaaa ctactctggtt gctgctatat cggccataat cactgcaact
421 gtactgtggt tattttagtac tggctcgaat ttaatgtatc tgggttggtt tccctacgat
481 ttccaagcaa ccgccgcaat ctattggatt agtttttctc atcaggcgat tggctctagt
541 ctgttgattc tggaaaaatc ggccaaacgat tcatatccgc cgattacatt ttgcttggtc
601 cctggacatg tgagactatt gataatcgct ttaagtcgaa ttggttcacg tgtaaaatta
661 tcaagttcgg aaaataccag aaaactcatc gaaggtatcc aggatccacg gaaactaatg
721 aagtaagaat aaagatttaa gaaccgcgat ttgtagctc cagagaactg ataattaatc
781 aaatgtaact ttctcaggat aatcgccta cttcgacgca ctttacactc tagccaaactg
841 ggccagttcc ttcttagtgg aatcaacat tcataaacac tcatcaacat cctgttcttt
901 gcggaataca actttgcaat gctttattat cgggtgttct ttgctgcgat gttaatagaa
961 ctatttccaa gttgttacta tggaaattctg atgacaatgg agtttgataa gctaccatat
1021 gccattcttc ccagcaactg gcttaaaatg gataaaagat acaatcgatc cttgataact
1081 ctgataacca taacactggt tccagtgaa ataaaagcag gtggtattgt tggcatcgat
1141 atgagtgcat ttttgcac agttcggatg gcatttctc ttacacttt agccttgtaa
1201 tttcgagat ag

```

28/37

FIG. 8J-1

DOR46

LOCUS XXXXX 1198 bp DNA INV 08-FEB-1999

DEFINITION Drosophila melanogaster odorant receptor DOR46g, GENSCAN

predicted complete cds.

ACCESSION :

KEYWORDS

SOURCE fruit fly.

ORGANISM Drosophila melanogaster

Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.

REFERENCE 1 (bases 1 to 1198)

AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey Rzhetsky and Richard Axel.

TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila Antenna

JOURNAL Cell (1999) In press

REFERENCE 2 (bases 1 to 1198)

AUTHORS Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G., Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L., Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L., Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L., Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P., Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S., Pfeiffer, B., Poon, L., Punch, E., Sequeira, A., Sethi, H., Snir, E., Svirskas, R.R., Twomey, B., Wan, K.H., Weinburg, T., Zhang, R., Zieran, L.L. and Rubin, G.M.

TITLE Sequencing of Drosophila melanogaster

JOURNAL Unpublished

REFERENCE 3 (bases 1 to 1198)

AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.

TITLE Direct Submission

JOURNAL Submitted (08-FEB-1999) Department of Biochemistry and Molecular Biophysics, HHMI-Columbia University, 701 West 168th Street, New York, NY 10032, USA

FEATURES Location/Qualifiers

Comment: /note='putative seven transmembrane G protein coupled receptor'

/note='sequence annotation for BDGP P1 clone DS07462: predicted using GENSCAN'

source 1..1198

/organism='Drosophila melanogaster'

/db_xref='taxon:7227'

/chromosome='II'

/map='59D5-7'

mRNA join(1..725,784..1198)

/gene='DOR46g'

gene 1..1198

/note='odorant receptor'

/gene='DOR46g'

exon 1..725

/gene='DOR46g'

CDS join(1..725,784..1198)

/gene='DOR46g'

/note='odorant receptor'

/codon_start=1

/product='DOR46g'

29/37

FIG. 8J-2

/translation="MAEVRVDSLEFFKSHWTAWRYLGVAHFRVENWKNLYVFYSIVSN
 LLVTLCYPVHLGISLFRNRTITEDILNLTTFATCTACSVKCLLYAYNIKDVLEMERLL
 RLLDERVVGPEQRSIYGQVRVQLRNVLVYFIGIYMPICALFAELSLFKKEERGLMPAW
 FPFDWLHSTRNYIANAYQIVIGISFQLLQNYVSDCFPAVVLCLLSHHKMLYNRFEEV
 GLDPARDAEKDLEACITDCHKHILELFRRIEAFISLPMLIQFTVTALNVICIGLAALVFF
 VSEPFARMYFIFYSLAMPLQIFPSCFFGTDNENYWGRLHYAASFSCNWHQTQNSFKRKM
 MLFVEQSLKKSTAVAGNMRIHLDITFFSTLKGAYSLEFTIIIRMRK"

intron 726..783 /gene="DOR46g"
 exon 784..1198 /gene="DOR46g"
 BASE COUNT 251 a 325 c 310 g 312 t
 ORIGIN
 1 atggcagagg tcagagtga cagctcggag tttttcaaga gccattggac cgcctggcgg
 61 tacttgggag tggctcattt tcgggtcgag aactggaaga acctttacgt gttttacagc
 121 attgtgtcga atctttctcgt gacctgtgc taccctcgctt acctgggaat atcccttctt
 181 cgcaaccgca ccattcaccga ggacatcctc aacctgacca cctttcgcac ctgcacagcc
 241 tgttcgggtga agtcgctgct ctacgcctac aacatcaagg atgtgtcggg gatggagcgg
 301 ctgttgaggcc ttttgatga acgctcgtg gtctcggagc aacgcagcat ctacggacaa
 361 gtgagggtcc agctgcgaaa tgtgtctata gtgtctatcg gcatctacat gccgtg-gcc
 421 ctgttcgccc agctatcctt tctgttcaag gaggagcgcg gtctgatgta tcccgccctg
 481 ttccctctcg actggctgca ctccaccagg aactattaca tagcgaaacg ctatcagata
 541 gtgggcattc cgttcagctt gctgcaaaac tatgttagcg actgctttcc ggccgtggcg
 601 ctgtgcctga tctcatccca catcaaaatg ttgtacaaca gattcggagg ggtgggcctg
 661 gatccagcca gagatgcgga gaaggacctg gaggcctgca tcaccgatca caagcatatt
 721 ctagagtggg caggcggctc attgtaacgt tcgtgttcta ttccattttc aacttttttc
 781 cagactattc cgacgcacg aggccttcct tccctcgccc atgctaattc agttcacagt
 841 gaccgccttg aatgtgtgca tcgggtttagc agccctgggt tttttcgtca gcgagcccat
 901 ggcacgggat tacttcatct tctactcctt ggccatgccc ctgcagatct ttccgtctct
 961 cttttttcggc accgacaacg agtactggtt cggacgcctc cactacgcgg ccttcagttg
 1021 caattggcac acacagaaac gtagctttta gcggaaaatg atgctgttcg ttgagcaatc
 1081 gttagaagaa agcacgcgct tggctggcgg aatgatgcgt atccaccctg acacgtcctt
 1141 tccacacctt aagggggcct actcctcctt taccatcatt atccggatga gaaagtag

30/37

FIG. 8K-1

DOR19g

LOCUS XXXXX 1293 bp DNA INV 09-FEB-1999
 DEFINITION Drosophila melanogaster odorant receptor DOR19g, GENSCAN
 predicted complete cds.
 ACCESSION ;
 KEYWORDS ;
 SOURCE fruit fly.
 ORGANISM Drosophila melanogaster
 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
 Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
 Drosophilidae; Drosophila.
 REFERENCE 1 (bases 1 to 1293)
 AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey
 Rzhetsky and Richard Axel.
 TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila
 Antenna
 JOURNAL Cell (1999) In press
 REFERENCE 2 (bases 1 to 1293)
 AUTHORS Celnikier, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
 Butenhoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
 Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,
 Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,
 Kim, E., Lee, B., Lewis, S., Li, P., Lomotan, M.A., Mazda, P.,
 Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,
 Pfeiffer, B., Poon, L., Punch, E., Sequeira, A., Sethi, H., Snir, E.,
 Svirskas, R.R., Twomey, B., Wan, K.H., Weinburg, T., Zhang, R.,
 Zieran, L.L. and Rubin, G.M.
 TITLE Sequencing of Drosophila melanogaster
 JOURNAL Unpublished
 REFERENCE 3 (bases 1 to 1293)
 AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.
 TITLE Direct Submission
 JOURNAL Submitted (09-FEB-1999) Department of Biochemistry and Molecular
 Biophysics, HHMI-Columbia University, 701 West 168th Street, New
 York, NY 10032, USA
 FEATURES Location/Qualifiers
 Comment: /note='putative seven transmembrane G protein coupled
 receptor'
 /note='sequence annotation for BDGP P1 clone DS01913;
 predicted using GENSCAN; join (72218-70926)'
 source 1..1293
 /organism='Drosophila melanogaster'
 /db_xref='taxon:7227'
 /chromosome='II'
 /map='46F5-6'
 mRNA 1..1293
 /gene='DOR19g'
 gene 1..1293
 /note='odorant receptor'
 /gene='DOR19g'
 exon 1..1293
 /gene='DOR19g'
 CDS 1..1293
 /gene='DOR19g'
 /note='odorant receptor'
 /codon_start=1
 /product='DOR19g'

31/37

FIG. 8K-2

```

/translation="MVTEDFYKYQVWYFQILGVWQLPTWAADHORRFQSMRFGFILVI
LFIMLLFSFEMLNNTISQVREILKVVFFMFATEISCMAKLLHLKSRKLAGLVDAMLS
PEFGVKSEQEQMLLEDRVAVVMRNSYIGMSLGAASLILIVPCFDNFGEPLAMLEV
CSIEGWICYWSOYLFHSICLLPTCVLNITYDSVAYSLLCFLKVQLQMLVLRLEKLGPV
TEPDQNEKIAMELRECAAYNRIVRFKDLVELFIKGGSVQLMGSVLVLVSNLYDMST
MSIANGDAIFMLKTCIYQLVNLWQIFIICYASNEVTVQSSRLCHSYSSQWTGWNRRAN
RRIVLLMQMRFNSPMLLSTFNPTFAFSLEAFGSVGGQKFLYISFITGYALLLSDRQLL
LQLLRTAEARQQLNFETPQHLKIFKPIFKSTQNVMHVH"
BASE COUNT      290 a      322 c      307 g      174 t
ORIGIN

```

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1 atggttacgg aggactttta taagtaccag gtgtggtact tccaaatcct tgggtgttgg
61 cagctcccca ctggggccgc agaccaccag cgtcgttttc agtccatgag gtttggcttc
121 atcctgggtca tctgtttcat catgctgctg cttttctcct tcgaaatggt gaacaacatt
181 tcccaagtta gggagatcct aaagggtatt ttcattgtcg ccacggaaat atcctgcgat
241 gccaaattat tgcatttgaa gttgaagagc cgcaaacctg ctggcttggg tgatgcgatg
301 ttgtcccccag agttcggcgt taaaagttaa caggaaatgc agatgctgga attggtatga
361 gtggcggtgc tccgcattgag gaactcctac ggcattcatgt cctcggggcg ggcctccctg
421 atcctctatag ttccctgttt cgacaacttt ggcgagctac cactggccat gttggaggta
481 tgcagcatcg agggatggat ctgctatttg tcgcagtacc tttccaactc gatttgcctg
541 ctgcccactt gtgctgtgaa tataacctac gactcgggtg cctactcgtt gctcctgttc
601 ttgaagggtc agctacaaat gctggctcctg cgattagaaa agttgggtcc tgtgatcgaa
661 cccccaggata atgagaaaaa cgcaatggaa ctgcgtgagt gtgccgccta ctacaacagg
721 attgttcggt tcaaggacct ggtggagctg ttcataaagg ggccaggatc tgtgcagctc
781 atgtgtctcg ttctgggtgct ggtgtccaac ctgtacgaca tgtccaccat tgccattgca
841 aacggcgatg ccatctttat gctcaagacc tgatctctac agctgggtgat gctctggcag
901 acctctcatca ttgtctacgc ctccaacgag gtaactgtcc agagctctag gttgtgtcac
961 agcatctaca gctcccaatg gacgggtagg aacaggggca accgcccgat tgtcctcttc
1021 atgatgcagc gctttaattc ccgagtgctc ctgagcacct ttaaccccac ctttgccttc
1081 agctctggag cctctgggtc tgtagggcag cagaaatctc tttatataac atttattact
1141 ggttatgctc ttctctcttc agatcgtcaa ctgctcctac agctactctg caactgctgaa
1201 gcgcgtcaac agttaaattt cgaacaccgc cagcacctaa agattttcaa gccgattttt
1261 aaaagcattc aaacagttat gcacgtacat taa

```

32/37

FIG. 8L-1

DOR24g

LOCUS XXXXX 2075 bp DNA INV 09-FEB-1999

DEFINITION Drosophila melanogaster odorant receptor DOR24g, GENSCAN
predicted complete cds.

ACCESSION ;

KEYWORDS ;

SOURCE fruit fly.

ORGANISM Drosophila melanogaster
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea;
Drosophilidae; Drosophila.

REFERENCE 1 (bases 1 to 2075)

AUTHORS Leslie B. Vosshall, Hubert Amrein, Pavel S. Morozov, Andrey
Rzhetsky and Richard Axel.

TITLE A Spatial Map of Olfactory Receptor Expression in the Drosophila
Antenna

JOURNAL Cell (1999) In press

REFERENCE 2 (bases 1 to 2075)

AUTHORS Celniker, S.E., Agbayani, A., Arcaina, T.T., Baxter, E., Blazej, R.G.,
Butenoff, C., Champe, M., Chavez, C., Chew, M., Ciesiolka, L.,
Doyle, C.M., Farfan, D.E., Galle, R., George, R.A., Harris, N.L.,
Hoskins, R.A., Houston, K.A., Hummasti, S.R., Karra, K., Kearney, L.,
Kim, E., Lee, B., Lewis, S., Li, P., Lomtan, M.A., Mazda, P.,
Moshrefi, A.R., Moshrefi, M., Nixon, K., Pacleb, J.M., Park, S.,
Pfeiffer, B., Poon, L., Punch, E., Sequeira, A., Sethi, H., Snir, E.,
Svirskas, R.R., Twomey, B., Wan, K.H., Weinburg, T., Zhang, R.,
Zieran, L.L. and Rubin, G.M.

TITLE Sequencing of Drosophila melanogaster

JOURNAL Unpublished

REFERENCE 3 (bases 1 to 2075)

AUTHORS Vosshall, L.B., Amrein, H., Morozov, P.S., Rzhetsky, A. and Axel, R.

TITLE Direct Submission

JOURNAL Submitted (09-FEB-1999) Department of Biochemistry and Molecular
Biophysics, HHMI-Columbia University, 701 West 168th Street, New
York, NY 10032, USA

FEATURES Location/Qualifiers

Comment: /tissue_type='adult antenna'
/note='putative seven transmembrane G protein coupled
receptor'
/note='sequence annotation for BDGP P1 clone DS00724;
predicted using GENSCAN; join (62623-64697)'
1..2075
/organism='Drosophila melanogaster'
/db_xref='taxon:7227'
/chromosome='II'
/map='47D6-E2'
join(1..185,739..1038,1338..1953,2025..2075)

mRNA /gene='DOR24g'

gene 1..2075
/note='odorant receptor'
/gene='DOR24g'

CDS join(1..185,739..1038,1338..1953,2025..2075)
/gene='DOR24g'
/note='odorant receptor'
/codon_start=1
/product='DOR24g'

0077227.001704

33/37

FIG. 8L-2

/translation="MRPTLQVLISVLQVLSAYAWDHTDCNDHYIEFMDYPDERATAYS
 NESSEWDFEFWRQVGLFLQVQKSTIALLLGDFLFSENREMWKRPYRAMNVFSIAAIF
 PFILAAVLHNKNVLLADAMVALLITLGLFKFSMILYLRDRFKRLIDKFRLLMSNG
 EFFFWNHIIIRNVYVLSFIWSAFASGTGVVLPVSLDTIFCSFTSNLCAFFKIAQYKVVVR
 FKGGSLKESQATLNKFVQYQSLDMCNDLNCQYQPIICAOFFISSLQLCMLGYLFSI
 TFAQTGEGVYASFIATIIIIQAYIYCYCENLKTESASFWEAIYDPSWHESLGAGGAST
 SICRSLIISMRAHRGRFRITGYFFEANMEAFSSIVRTAMSYITMLRSFS"

exon 1...185
 /gene="DOR24g"
 intron 186..738
 /gene="DOR24g"
 exon 739..1038
 /gene="DOR24g"
 intron 1039..1337
 /gene="DOR24g"
 exon 1338..1953
 /gene="DOR24g"
 intron 1954..2024
 /gene="DOR24g"
 exon 2025..2075
 /gene="DOR24g"

BASE COUNT 548 a 460 c 447 g 620 t
 ORIGIN

1 atgcgcgccaa cactccaggt cctcatcagt gtccctttgtc tggctctctgc ctacgcctcgg
 61 gatcataccg actgtaacga tcactatatt gaattccatgg actatcccca tgagagagact
 121 accgcctata gcaatgaatt ctacagaatgg gatctctcttg aattcttggag gcaagtgtctt
 181 ggcctgtagc aatcttgaca tcgctgaccca cgctctctggt caaagcaaat acctggccgag
 241 acatgtgacc ctccgtagtgc agggcgttga taaagaacat taaaatttaa ccggagttctt
 301 cactttactat gccctaaagag gtgtcaaacg gaggtattat ttggggcgtga tatattatac
 361 cctctaaagg agtatccccca ccagggtgaaa cccctataaaa ccccttgacct cgttaatgga
 421 aagtactgaa ccggaataga aagtggggcac ttctataatgg tagaaatttg tcgggatgaa
 481 atataatagt agatatatat aatattatat ctgattatc cagcatcaat cacaagataa
 541 aaaaaaataa taattcataa tctcataatcc atatgtaata ggcatcttgta aatgttgtaa
 601 acaaaaggaa ggtattaaag agctgtactt tcgcactctgt atttcatatta ttccactaca
 661 attgaaagggt tcaaaacccc tgaactgaac acacttgact tagtgtgagg ccgaattaac
 721 ccttgtcgac atggacagtt ttctgcaagt acagaagagc accattgccc ttctgggcttt
 781 tgatctcttt agtgaataac gagaaatgtg gaaacgcccc tatagagcaa tgaatgtgtt
 841 tagcatagct gccacttttc cctttatcct ggcagctgtg tcccataaatt ggaagaagt
 901 attgctgtgt gccgatgcca tgggtggccct accataaacc attctgggccc tattcaagtt
 961 tagcatgata ctttacttac gtccggaatt ccaacgactg attgacaaat ttcttttgtt
 1021 catgtcgatg ggtgagttgt aatccatttc ggcagaaatg tgtatcattt cactttactat
 1081 ttttataggg cggaacaggg cgaggaaatc gccgagattc tcaactgcagc aaacagcagc
 1141 gatcaacgaa tgtgcactct gtttaggact ctgttctccc tcgctctgggc cttgaatagt
 1201 gtctctgccc tcgtgagaaat gggctccagg tatgtgttag cagggtcacg agagcccgag
 1261 tctgctttttt cctgtctgtga tgtacaaatg atataatga tatatgggta tcaagtattc
 1321 aggcctttgtt cctaaagtgtt tccctggaat atccacatca tctcgcaatt ta ttttttgagc
 1381 ttcatatagc gcgctcttcgc ctgcagagatt gtgggtttatc ctgtgtctag cttggatacc
 1441 atattctgtt ccttcaccag caacctgtgc gccttttcca aaattgcgca gtacaagggtg
 1501 gttagattta agggcgagat ctttaagaa tcacagggcca cattgaacaa attctttgccc
 1561 ctgtaccaga ccagcttgga tatgtgtcaac gatctgaaat agtgcatacca accgatattc
 1621 tgcgcccagt tcttctatttc atctctgcaa ctctgcacg tgggatactct gttctccatt
 1681 acttttgccc agacagaggg cgtctactat gcctcatcca taggccacaa cattatacaa
 1741 gcttatctct actgtctact cggggagaac ctgaagacgg agagtgccag cttcgagtgg
 1801 gccatctacg acagtcctgt gcacagagat ttgggtgctg gtggagccct tacctcgatc
 1861 tggcgatcct tgcctgatcag catgatgcgg gctcatcggg gattccgatc tacggagatc
 1921 ttttctgagg caaacatgga ggcctttctca tcgggtgggtg aatcatttcc attgtacaat
 1981 acatggattt cactgaatac tcttttctaa cttctcgctt ttagattgct cgcacggcga
 2041 tgcctcatat cacaatgctg agatcattct cctaaa

102799 4222660

FIG. 9



DOR20-GAL4:UAS-NsybGFP



DOR25-GAL4:UAS-NsybGFP



DOR24-GAL4:UAS-NsybGFP



DOR53-GAL4:UAS-NsybGFP

ClustalW Alignment of the DOR53 Family



FIG. 10A-2

[illegible]

FIG. 10B

ClustalW Alignment of the DOR64 Family

D0982	MEK	QED	QK	QV	QW	QX	QY	QZ	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q0	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70	Q71	Q72	Q73	Q74	Q75	Q76	Q77	Q78	Q79	Q80	Q81	Q82	Q83	Q84	Q85	Q86	Q87	Q88	Q89	Q90	Q91	Q92	Q93	Q94	Q95	Q96	Q97	Q98	Q99																																																																																																																																																																																																																																																										
D0983	Q100	Q101	Q102	Q103	Q104	Q105	Q106	Q107	Q108	Q109	Q110	Q111	Q112	Q113	Q114	Q115	Q116	Q117	Q118	Q119	Q120	Q121	Q122	Q123	Q124	Q125	Q126	Q127	Q128	Q129	Q130	Q131	Q132	Q133	Q134	Q135	Q136	Q137	Q138	Q139	Q140	Q141	Q142	Q143	Q144	Q145	Q146	Q147	Q148	Q149	Q150	Q151	Q152	Q153	Q154	Q155	Q156	Q157	Q158	Q159	Q160	Q161	Q162	Q163	Q164	Q165	Q166	Q167	Q168	Q169	Q170	Q171	Q172	Q173	Q174	Q175	Q176	Q177	Q178	Q179	Q180	Q181	Q182	Q183	Q184	Q185	Q186	Q187	Q188	Q189	Q190	Q191	Q192	Q193	Q194	Q195	Q196	Q197	Q198	Q199	Q200	Q201	Q202	Q203	Q204	Q205	Q206	Q207	Q208	Q209	Q210	Q211	Q212	Q213	Q214	Q215	Q216	Q217	Q218	Q219	Q220	Q221	Q222	Q223	Q224	Q225	Q226	Q227	Q228	Q229	Q230	Q231	Q232	Q233	Q234	Q235	Q236	Q237	Q238	Q239	Q240	Q241	Q242	Q243	Q244	Q245	Q246	Q247	Q248	Q249	Q250	Q251	Q252	Q253	Q254	Q255	Q256	Q257	Q258	Q259	Q260	Q261	Q262	Q263	Q264	Q265	Q266	Q267	Q268	Q269	Q270	Q271	Q272	Q273	Q274	Q275	Q276	Q277	Q278	Q279	Q280	Q281	Q282	Q283	Q284	Q285	Q286	Q287	Q288	Q289	Q290	Q291	Q292	Q293	Q294	Q295	Q296	Q297	Q298	Q299	Q300	Q301	Q302	Q303	Q304	Q305	Q306	Q307	Q308	Q309	Q310	Q311	Q312	Q313	Q314	Q315	Q316	Q317	Q318	Q319	Q320	Q321	Q322	Q323	Q324	Q325	Q326	Q327	Q328	Q329	Q330	Q331	Q332	Q333	Q334	Q335	Q336	Q337	Q338	Q339	Q340	Q341	Q342	Q343	Q344	Q345	Q346	Q347	Q348	Q349	Q350	Q351	Q352	Q353	Q354	Q355	Q356	Q357	Q358	Q359	Q360	Q361	Q362	Q363	Q364	Q365	Q366	Q367	Q368	Q369	Q370	Q371	Q372	Q373	Q374	Q375	Q376	Q377	Q378	Q379	Q380	Q381	Q382	Q383	Q384	Q385	Q386	Q387	Q388	Q389	Q390	Q391	Q392	Q393	Q394	Q395	Q396	Q397	Q398	Q399	Q400	Q401	Q402	Q403	Q404	Q405	Q406	Q407	Q408	Q409	Q410	Q411	Q412	Q413	Q414	Q415	Q416	Q417	Q418	Q419	Q420	Q421	Q422	Q423	Q424	Q425	Q426	Q427	Q428	Q429	Q430	Q431	Q432	Q433	Q434	Q435	Q436	Q437	Q438	Q439	Q440	Q441	Q442	Q443	Q444	Q445	Q446	Q447	Q448	Q449	Q450	Q451	Q452	Q453	Q454	Q455	Q456	Q457